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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,627	01/27/2004	Chan Young Park	2080-3-223	3767

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EXAMINER

BLACKMAN, ROCHELLE ANN J

ART UNIT PAPER NUMBER

2851

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/766,627

Applicant(s)

PARK, CHAN YOUNG

Examiner

Rochelle Blackman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 1 is objected to because of the following informalities: One of the "light" 's in the phrase "mixing the light red, green and blue light to one", should be omitted. Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Butterworth et al., U.S. Patent No. 6,005,722.

Regarding claims 8 and 9, Butterworth discloses a "laser display system"(see FIGS. 14-16) having "lasers generating red, green and blue light as light sources"(see 412 of FIG. 16 and col. 9, lines 60-62) comprising: a "diffuser diffusing the light generated in the lasers"(see 34 of FIG. 2); an "illuminating device irradiating with the diffused light"(see 36 of FIG. 2); a "display panel generating an image by modulating transmittance of the light from the illuminating device according to an electric signal of a video signal"(18 of FIG. 16); and a "controller sequentially turning on/off the lasers of the corresponding color after receiving the video signal and separating into red, green and

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blue signals”(see 26 of FIG. 1); “wherein the diffuser diffuses the red, green and blue light irregularly at different progressing angles”(see 34 of FIG. 2).

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 4-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Ikeda, U.S. Patent Application Publication No. 2004/007008.

Regarding claims 1 and 4-7, Ikeda discloses a “laser display system”(see FIG. 12) having “at least one laser as light source”(see 72R, 72G, 72B of FIG. 12) comprising: “at least one filter transmitting or reflecting a particular wavelength of red, green and blue light generated in the laser, and mixing the light red, green and blue light to one”(see 80 of FIG. 12); a “rotation color separator separating the mixed light into the red, green and blue light sequentially”(see 88 of FIG. 12 and see *color wheel* in paragraph [0124]), a “diffuser diffusing the separated light”(see 84 of FIG. 12); an “illuminating device irradiating with the light progressed from the diffuser”(see 86 of FIG. 12); a “display panel generating an image by modulating transmittance of the light from the illuminating device according to an electric signal of a video signal”(see 78R, 78G, 7B of FIG. 12); and a “controller receiving the video signal, and making correspondence

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of color areas from the rotation color separator and the display panel”(see paragraphs [0114] and [0118] – although not shown, the “controller” is considered located in the projector or the appliance for projecting computer images and the “video signal” is considered to be the image signals synchronously input in the “display panel” 78R, 78G, 7B); “wherein the rotation color separator is divided into R, G and B areas for transmitting the red, green and blue colors, and the respective areas of red, green and blue are sequentially irradiated with the white light as the rotation color separator is rotated, whereby only the light of the corresponding area is transmitted”(see 88 of FIG. 12 and see *color wheel* in paragraph [0124]); “wherein the diffuser diffuses the red, green and blue light irregularly at different progressing angles”(see 84 of FIG. 12); “wherein the controller detects the color of the light transmitted in the rotation color separator, and transmits the signal of the corresponding color to the display panel by synchronizing with the detected color; wherein a color separation coating area is formed on the front of the rotation color separator, and a dispersing material coating area is formed on the rear thereof, and then the two area are rotated with a rotation axis, thereby integrating color separation and speckle prevention functions”(see paragraph [0124])

Regarding claims 8 and 9, Ikeda discloses a “laser display system”(see FIG. 12) having “lasers generating red, green and blue light as light sources”(see 72R, 72G, 72B of FIG. 12) comprising: a “diffuser diffusing the light generated in the lasers”(see 84 of FIG. 12); an “illuminating device irradiating with the diffused light”(see 86 of FIG. 12); a “display panel generating an image by modulating transmittance of the light from the

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illuminating device according to an electric signal of a video signal”(see 78R, 78G, 78B of FIG. 12); and a “controller sequentially turning on/off the lasers of the corresponding color after receiving the video signal and separating into red, green and blue signals”(see paragraphs [0114] and [0118] – although not shown, the “controller” is considered located in the projector or the appliance for projecting computer images and the “video signal” is considered to be the image signals synchronously input in the “display panel” 78R, 78G, 78B); “wherein the diffuser diffuses the red, green and blue light irregularly at different progressing angles”(see 84 of FIG. 12).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 and 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butterworth, U.S. Patent No. 6,005,722 in view of Ikeda, U.S. Patent Application Publication No. 2004/007008.

Butterworth discloses a “laser display system”(see FIGS. 14-16) having “at least one laser as light source”(see 412 of FIG. 16) comprising: “at least one filter transmitting or reflecting a particular wavelength of red, green and blue light generated in the laser”(see R, G, B of FIG. 14); a “rotation color separator separating the mixed light into the red, green and blue light sequentially”(see 314 of FIGS. 14-16); a “diffuser diffusing

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the separated light”(see 34 of FIG. 2); an “illuminating device irradiating with the light progressed from the diffuser”(see 36 of FIG. 2); a “display panel generating an image by modulating transmittance of the light from the illuminating device according to an electric signal of a video signal”(see 18 of FIG. 16); and a “controller receiving the video signal, and making correspondence of color areas from the rotation color separator and the display panel”(see 26 of FIG. 1); “wherein the rotation color separator is divided into R, G and B areas for transmitting the red, green and blue colors, and the respective areas of red, green and blue are sequentially irradiated with the white light as the rotation color separator is rotated, whereby only the light of the corresponding area is transmitted”(see 314 of FIG. 14-16); “wherein the diffuser diffuses the red, green and blue light irregularly at different progressing angles”(see 34 of FIG. 2); “wherein the controller detects the color of the light transmitted in the rotation color separator, and transmits the signal of the corresponding color to the display panel by synchronizing with the detected color”(see 26 of FIG. 2); “wherein a color separation coating area is formed on the front of the rotation color separator, and a dispersing material coating area is formed on the rear thereof, and then the two area are rotated with a rotation axis, thereby integrating color separation and speckle prevention functions”(see 314 of FIGS. 14-16 and col. 9, lines 50-55).

Butterworth discloses three separate lasers can be used for generating three separate beams of red, green, and blue light (see col. 9, lines 60-62), but does not appear to disclose at least one filter transmitting or reflecting a particular wavelength of

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red, green and blue light generated in the laser along with "mixing the light red, green and blue light to one".

Ikeda discloses a laser display system comprising a color synthesizing filter 80 for synthesizing a red color (R) laser beam, green color (G) laser beam, and blue color (B) laser beam (see pg. 9, paragraph [0117]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the "laser display system" of the Butterworth reference with a color synthesizing filter, as taught by Ikeda in order to synthesize three separate beams of red, green, and blue light, if three separate lasers for generating the beams of red, green, and blue light are used, thus reducing the size of the "laser display system" due the reduction in the number of light beam reflections.

2. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butterworth, U.S. Patent No. 6,005,722 in view of Ikeda, U.S. Patent Application Publication No. 2004/007008 and Roddy et al., U.S. Patent No. 6,648,475.

Butterworth and Ikeda disclose the claimed invention except for a "first filter for mixing yellow light by transmitting the red light and reflecting the green light; and a second filter transmitting the yellow light and reflecting the blue light" and/or a "first filter for mixing azure light by transmitting the green light and reflecting the blue light; and a second filter transmitting the azure light and reflecting the red light".

Roddy discloses a projection system with lasers 12r, 12g, 12b, 12bg, dichroic combiner 35, which direct the beam from any laser light source 12 on its individual axis

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into common optical axis O, and shutters 26r, 26g, 26b, and 26bg operated to disable one or more colors depending on scene color content, if desired (see FIGS. 6 and 7 and col. 12, lines 23-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the "laser system" of the combined Butterworth and Ikeda reference with a dichroic combiner like that of the Roddy reference, in order to mix and transmit certain colors, like yellow light and azure light, depending on a scene color content and to provide a "laser display system" having an expanded color gamut.

3. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda, U.S. Patent Application Publication No. 2004/007008 in view of Roddy et al., U.S. Patent No. 6,648,475.

Ikeda discloses a color synthesizing filter 80 that may be a dichroic member, but does not disclose a "first filter for mixing yellow light by transmitting the red light and reflecting the green light; and a second filter transmitting the yellow light and reflecting the blue light" and/or a "first filter for mixing azure light by transmitting the green light and reflecting the blue light; and a second filter transmitting the azure light and reflecting the red light".

Roddy discloses a projection system with lasers 12r, 12g, 12b, 12bg, dichroic combiner 35, which direct the beam from any laser light source 12 on its individual axis into common optical axis O, and shutters 26r, 26g, 26b, and 26bg operated to disable

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one or more colors depending on scene color content, if desired (see FIGS. 6 and 7 and col. 12, lines 23-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the "laser system" of the Ikeda reference with a dichroic combiner like that of the Roddy reference, in order to mix and transmit certain colors, like yellow light and azure light, depending on a scene color content and to provide a "laser display system" having an expanded color gamut.

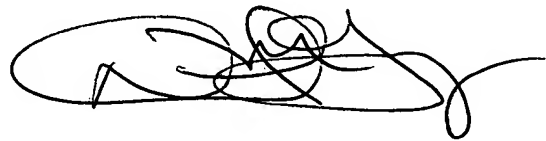
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'David Gray', with a large, stylized loop at the end.

David Gray
Primary Examiner

RB